

WHAT IS CLAIMED IS:

1. A method comprising contacting T cell precursor with an appropriate amount of interferon- α (IFN- α), wherein said contacting induces differentiation to a Tr1 cell.
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2. The method of Claim 1, wherein said Tr1 cell is characterized by:
 - a) CD4 expression;
 - 10 b) high level of IL-10 production;
 - c) significant levels of TGF- β or IFN- γ production; and
 - d) little or no IL-4 or IL-2.
3. The method of Claim 2, wherein:
 - a) said high level of IL-10 production is at least 6000 pg in 1 ml for 10^6 cells in 48 h;
 - 15 b) said significant level of TGF- β production is at least 600 pg in 1 ml for 10^6 cells in 48 h;
 - c) said significant level of IFN- γ production is at least 1000 pg in 1 ml
20 for 10^6 cells in 48 h;
 - d) said little or no IL-4 is less than 200 pg in 1 ml for 10^6 cell in 48 h;
or
 - e) said little or no IL-2 is less than 200 pg in 1 ml for 10^6 cell in 48 h.
- 25 4. The method of Claim 3, wherein:
 - a) said high level of IL-10 production is at least 6000 pg in 1 ml for 10^6 cells in 48 h;
 - b) said significant level of TGF- β production is at least 600 pg in 1 ml
30 for 10^6 cells in 48 h;
 - c) said significant level of IFN- γ production is at least 1000 pg in 1 ml for 10^6 cells in 48 h;
 - d) said little or no IL-4 is less than 200 pg in 1 ml for 10^6 cell in 48 h;
and
 - e) said little or no IL-2 is less than 200 pg in 1 ml for 10^6 cell in 48 h.

5. The method of Claim 2, wherein said Tr1 cell:

- a) has a reduced proliferative potential in response to polyclonal activation; and/or
- b) suppresses response to alloantigens by responder T cells.

10 6. The method of Claim 1, wherein said Tr1 cells suppress antigen-specific activation of naive autologous T cells.

15 7. The method of Claim 5, wherein said suppressed response to alloantigens is mediated by IL-10 and/or TGF- β .

8. The method of Claim 1, wherein said T cell precursors are:

- a) CD4+; and/or
- b) cord blood leucocytes.

15 9. The method of Claim 1, wherein said T cell precursor is a peripheral blood T cell.

20 10. The method of Claim 8, wherein said contacting is in combination with an appropriate amount of IL-10.

11. The method of Claim 1, wherein said contacting is in combination with an antigen.

25 12. The method of Claim 11, wherein said antigen is an alloantigen.

13. The method of Claim 1, wherein said Tr1 cells are further proliferated in IL-15.

30 14. The method of Claim 1, wherein said Tr1 cells are further tested for antigen specificity.

15. A method for increasing the number of Tr1 cells, comprising contacting cells with IL-15 and allowing growth, thereby resulting in an increase in the number of said Tr1 cells.

5 16. The method of Claim 15, wherein:

- a) said allowing growth is culturing for at least 2 days;
- b) said increase is at least 3 fold; or
- c) said cells are Tr1 cells.

10 17. The method of Claim 15, wherein said contacting is in a tissue culture plate.

18. The method of Claim 15, wherein said Tr1 cells are specifically anergic to alloantigen.